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Atkin

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(54) **PERSONAL HYGIENE BRUSH**

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(52) **U.S. Cl.**
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(58) **Field of Classification Search**
USPC 15/160, 106, 167.1, 167.2, 111
See application file for complete search history.

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(57) **ABSTRACT**

A personal hygiene brush which includes a furcated end comprising cleaning heads from which bristles radiate about the outer perimeter and a non-furcated end including an additional cleaning head from which bristles radiate about the outer perimeter. The personal hygiene brush is capable of cleaning of all types of piercings, intra and extra-orally, as well as dental implants and implant supported prosthesis. The personal hygiene brush enables the user to clean around, under and through their individual ornamental body rings and rods without removing them from the body parts to which they are attached.

20 Claims, 8 Drawing Sheets

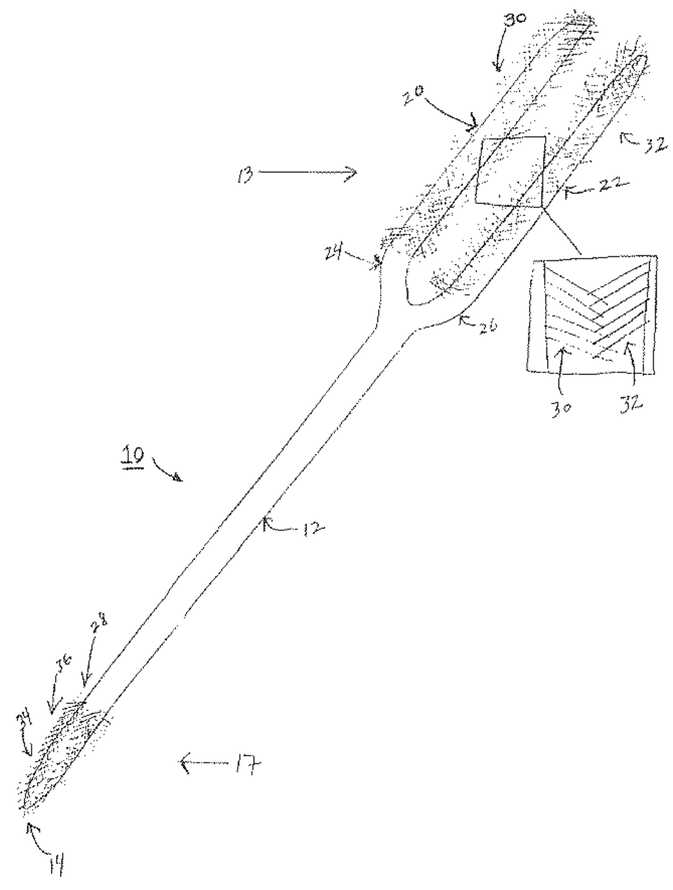

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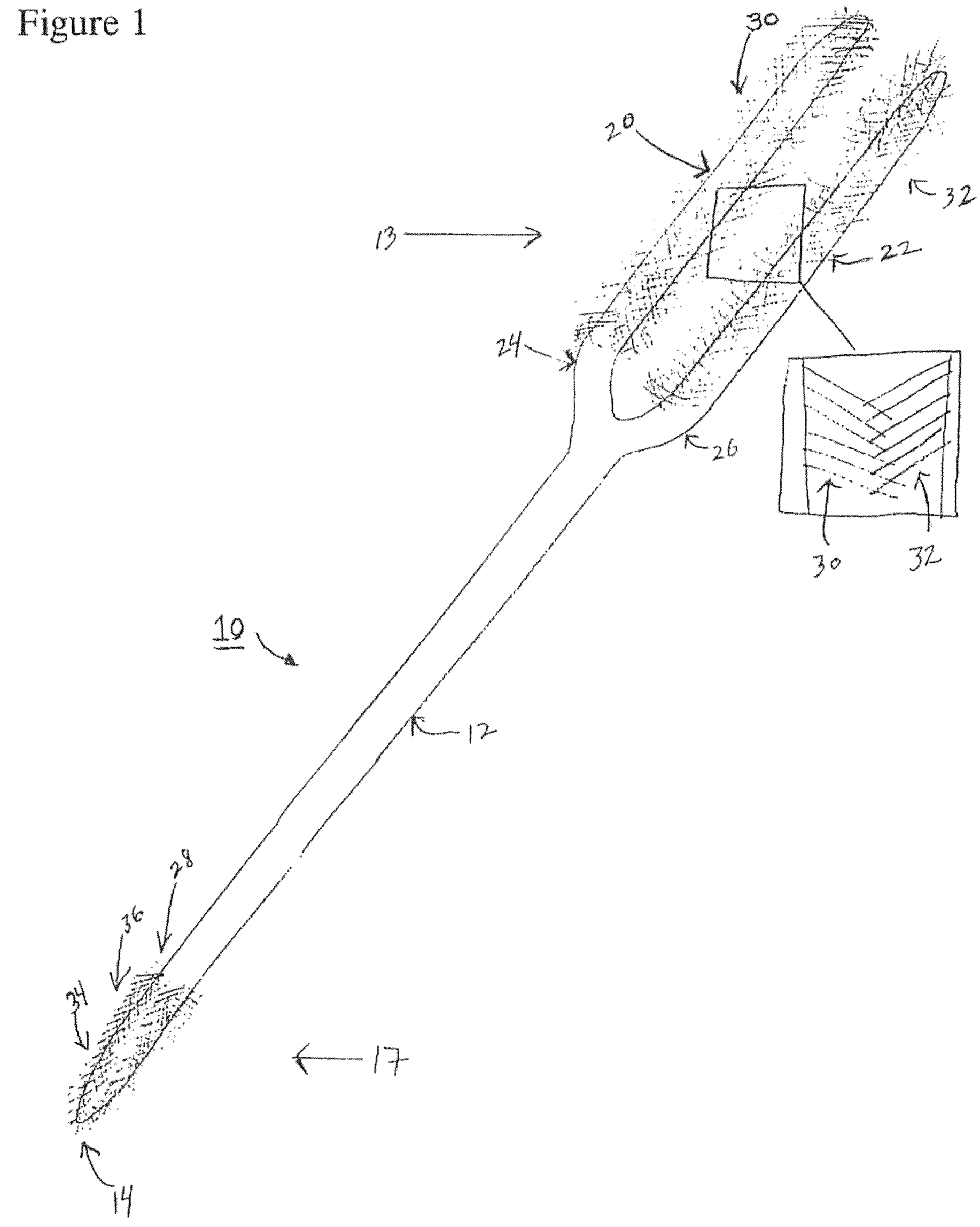
Figure 1



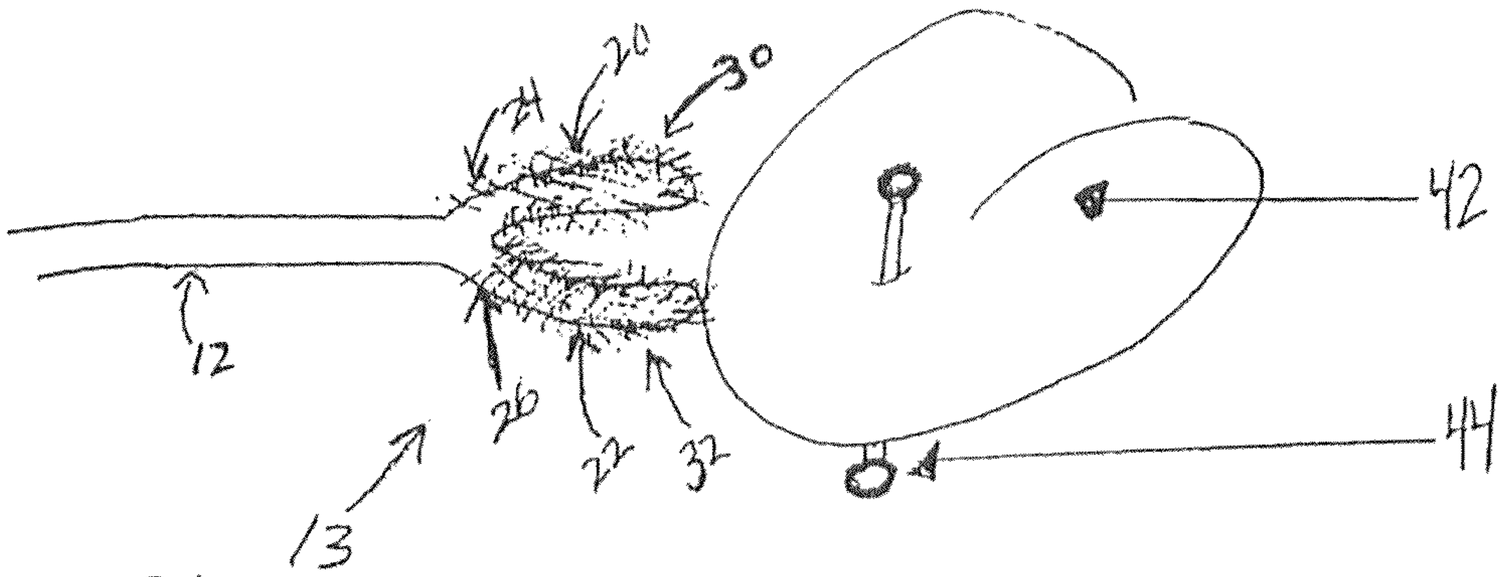


Figure 2A

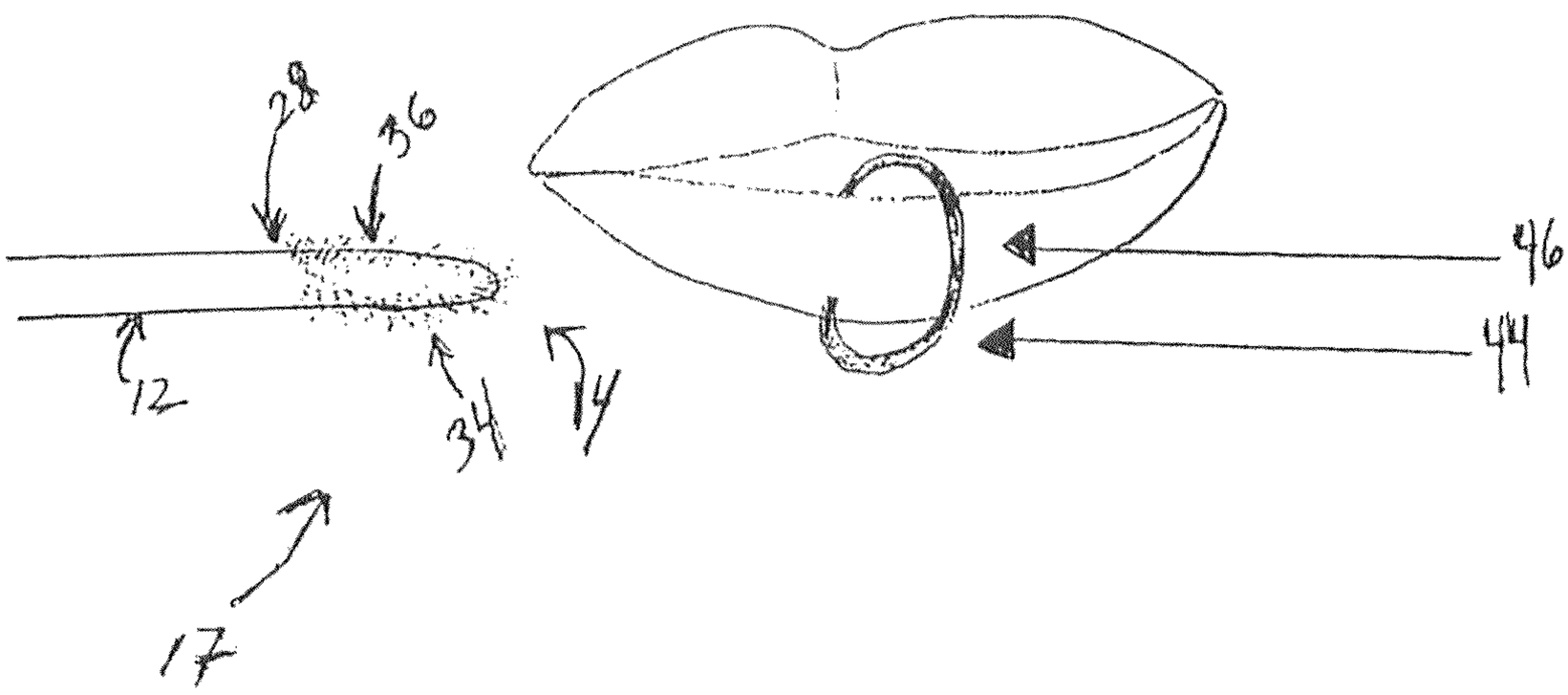
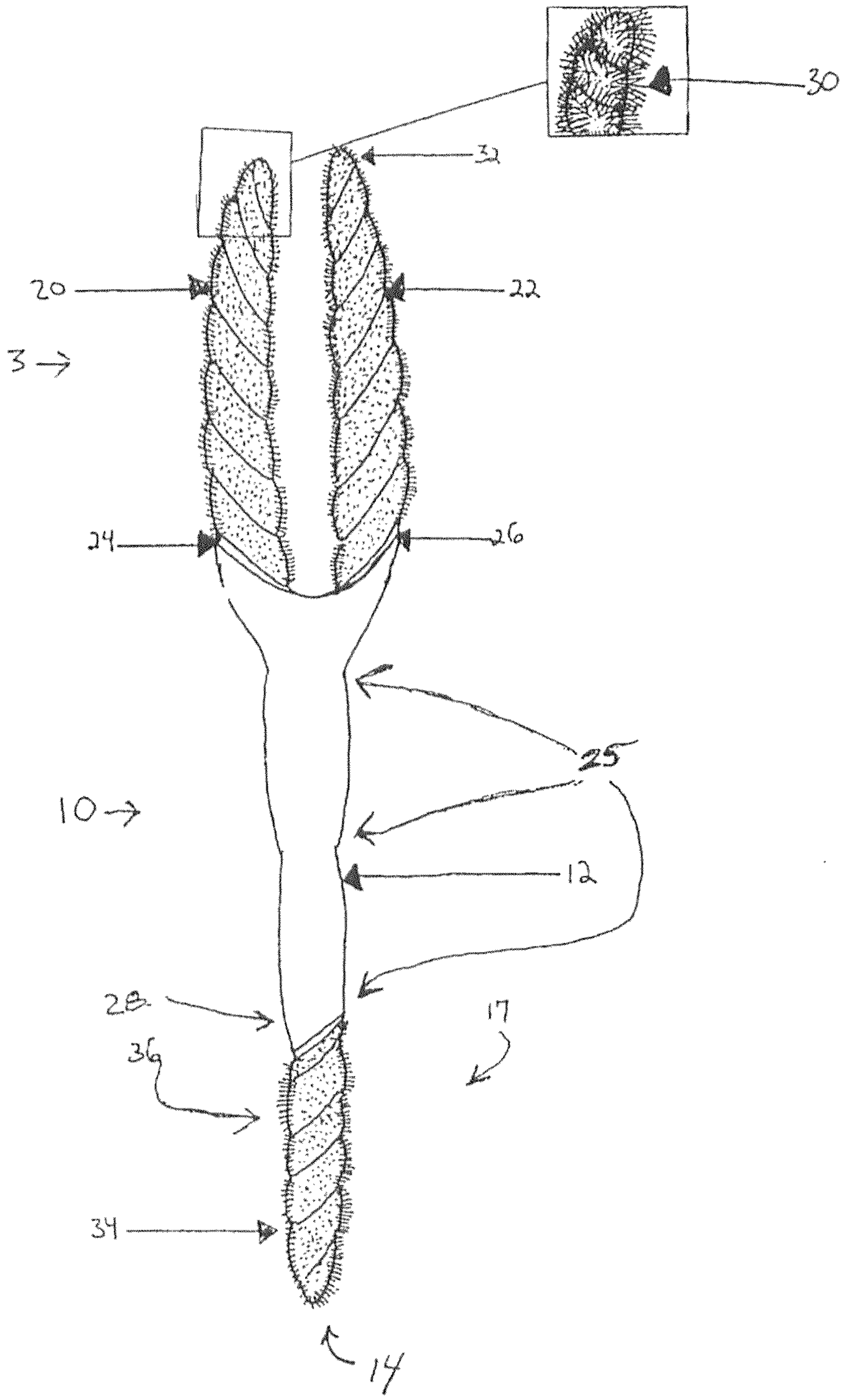


Figure 2B

Figure 3



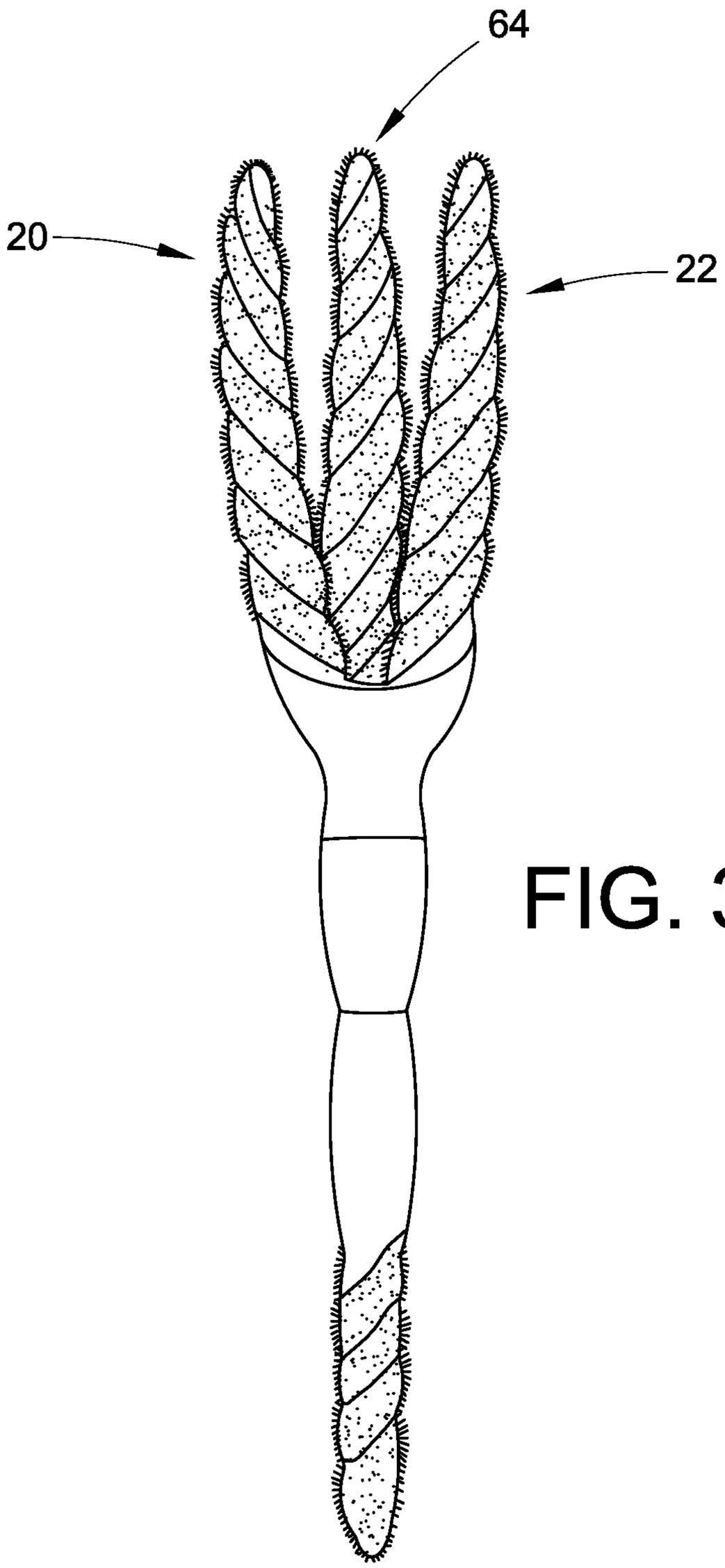


FIG. 3A

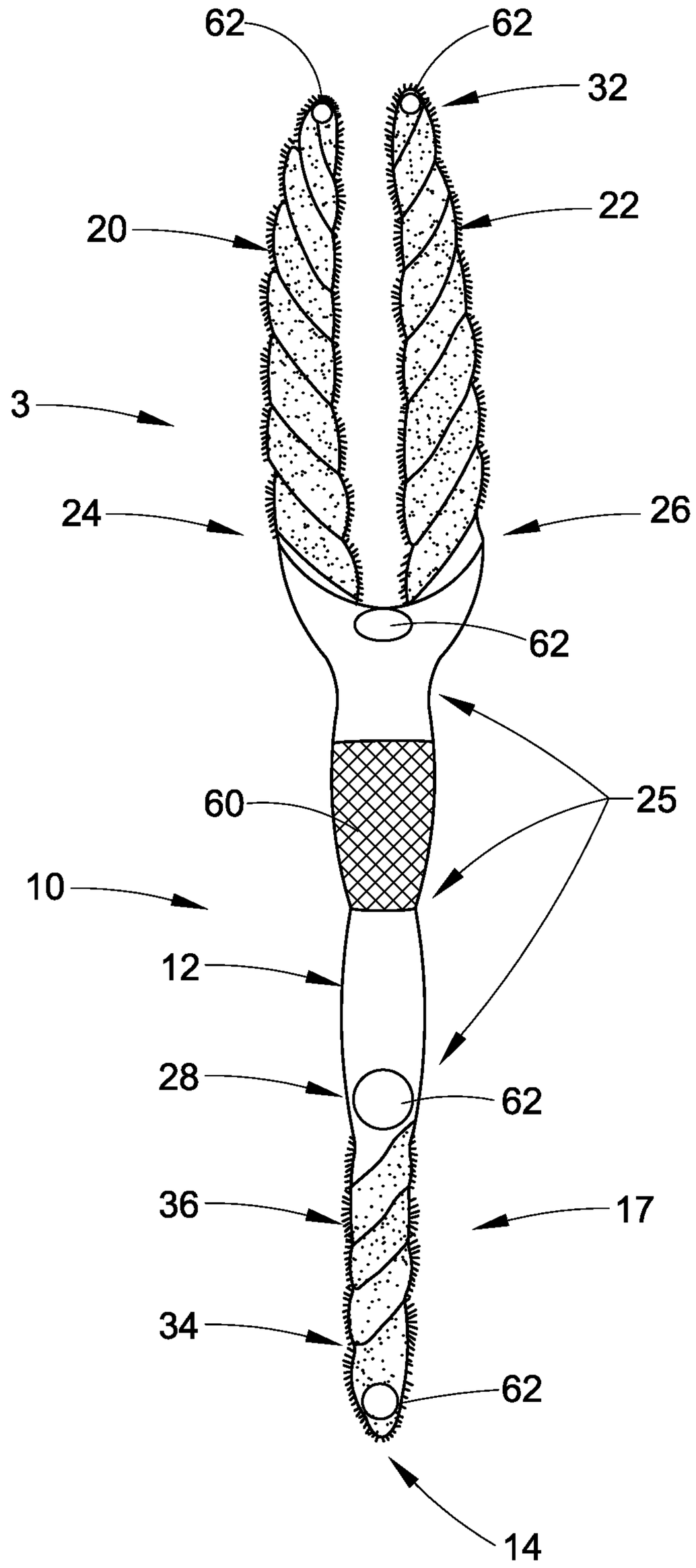
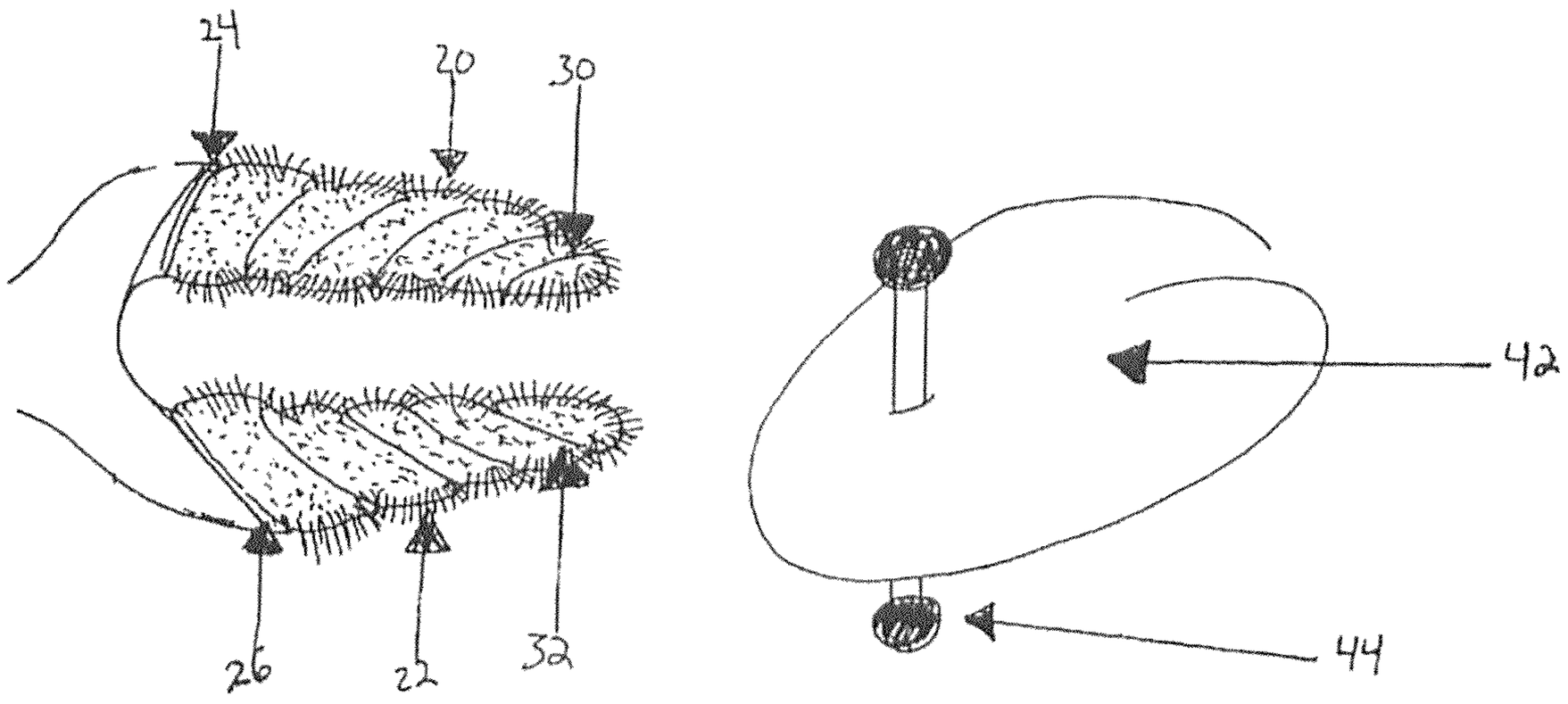


FIG. 3B

Figure 4A



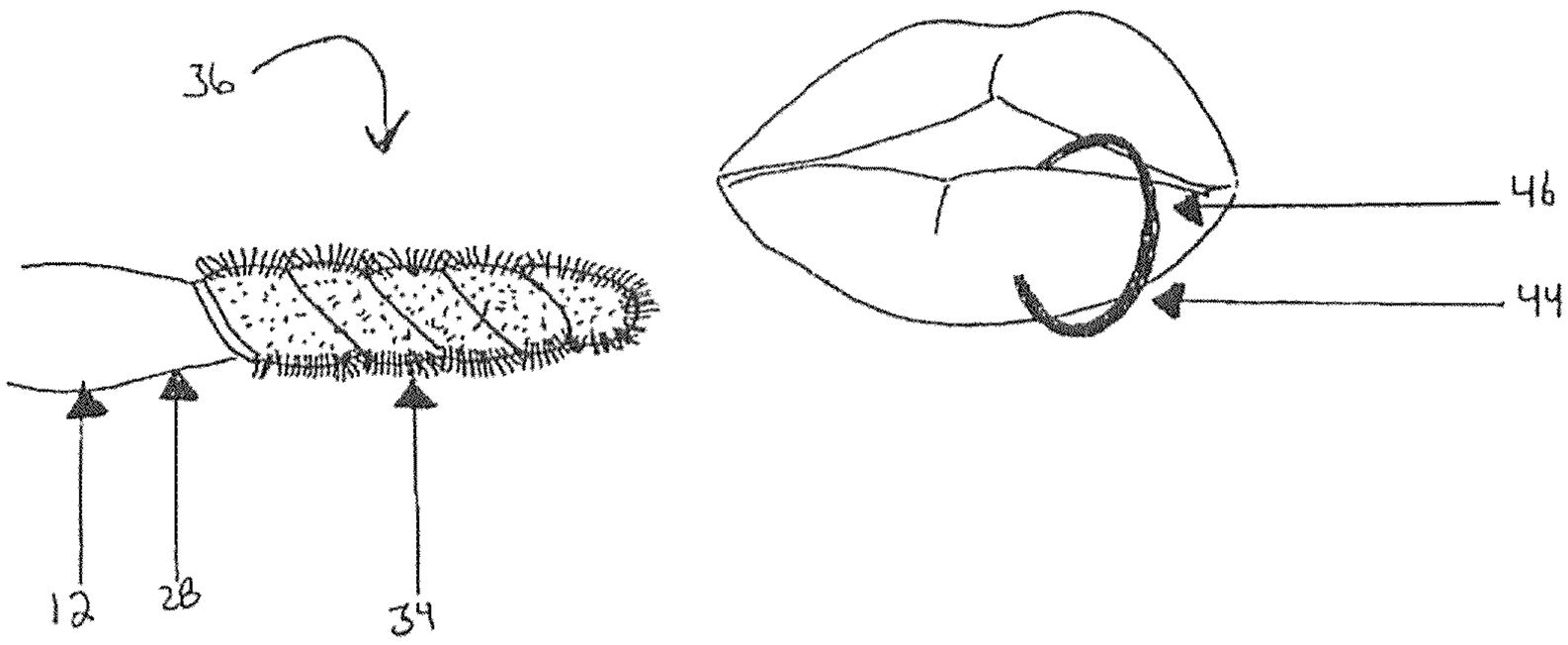
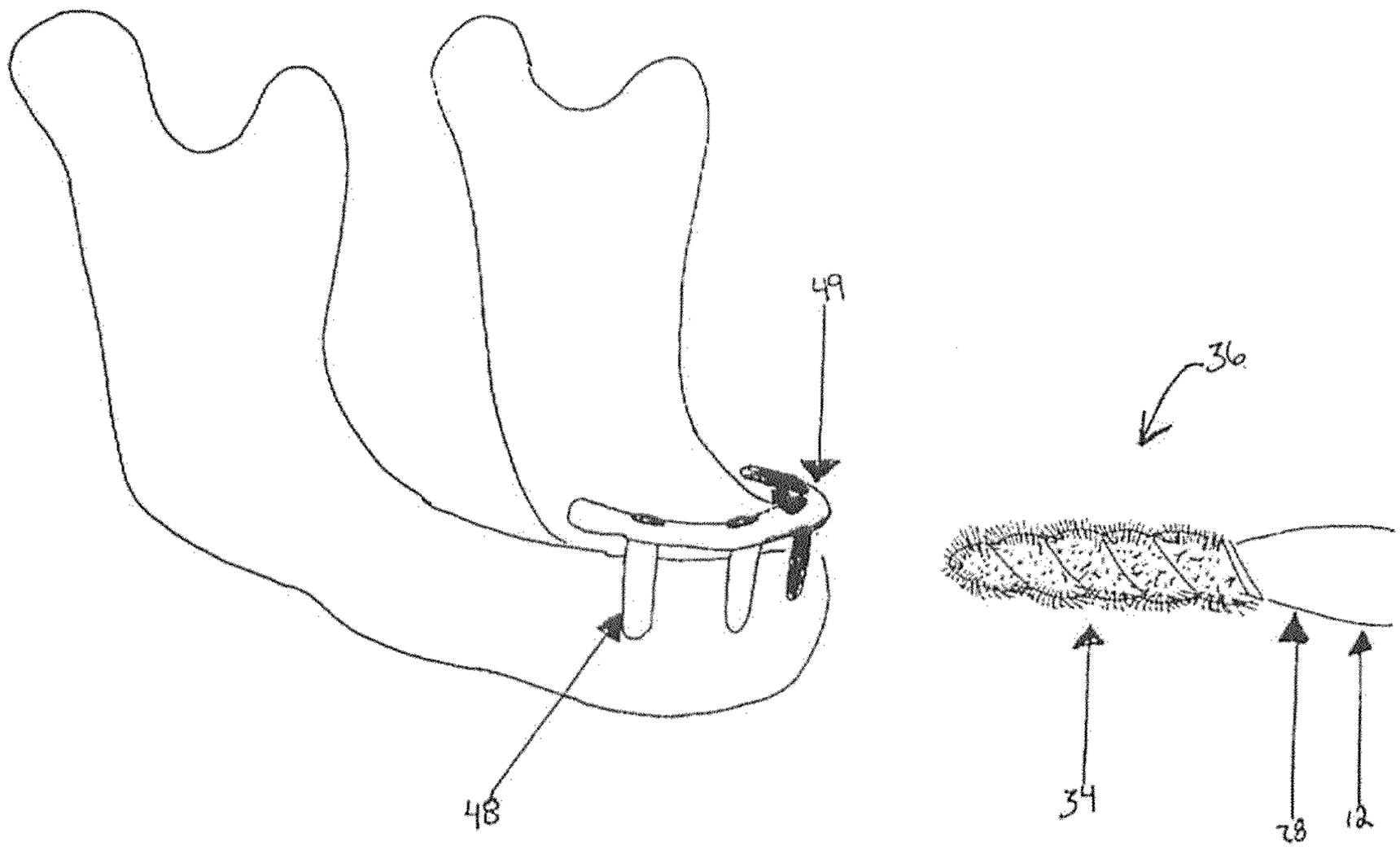


Figure 4B

Figure 4C



PERSONAL HYGIENE BRUSH

TECHNICAL FIELD

Disclosed is a personal hygiene cleaning brush. The brush includes a plurality of brush surfaces that facilitate a more efficient and thorough cleaning of oral and body piercings, dental implants, dental implant supported dentures, a wide variety of prosthetics and body ornaments, and surrounding tissues.

BACKGROUND

Oral and body piercings have become an increasingly popular form of self-expression in today's society. Piercings are commonly placed without sterile techniques or anesthetic, and healing takes upwards of four to six weeks. Piercings of the tongue, lip, uvula, frenum, as well as areas outside of the mouth can become easily infected and irritated not appropriately cleaned. Secondary infections are common and cases have been reported where hospitalization was necessary. For a complete discussion of intraoral/perioral piercing and tongue splitting and associated adverse oral and systemic conditions, see American Dental Association Positions and Statement, as adopted by the ADA House of Delegates October, 1998 and amended October. 2004, http://www.ada.org/prof/resources/positions/statements/piercing.asp.

Dental implants have also become increasingly popular as the aging population becomes more interested in alternatives for dentures and fixed bridge restorations. Many types of implant support prosthesis are available, including "bar retained" dentures and "ball retained" dentures, however, the ability to clean under and around the implants is difficult even if the dentures are removed. Currently, patients are instructed to brush, floss, or use interdental brushes to clean around the prosthesis.

Proper care after the placement of the piercing is a crucial component of avoiding pain, swelling and infection. Once an oral piercing is placed, cleaning instructions are limited to brushing gently with a toothbrush or rinsing with salt water. Similar instructions are given once dental implants are in place. An interdental toothbrush essentially serves two main purposes, which are removing plaque and debris from the tooth and massaging the tissue. Currently, there are no specific products on the market that are designed specifically for the cleaning of oral and body piercings or dental implants.

Most toothbrushes of the prior art include one handle and one brush. There have been variations on both the handle and their brushes. For example, curved and angled handles have been suggested. Other toothbrushes of varied shapes and designs have also been advanced. In more recent times, hygienist and dentist groups have recognized the inadequacies of prior art brushes. For instance, many brushes do not properly access all difficult to reach areas for total teeth cleaning and gum massage. Because of these needs, brushes with cone shape bristles, some with straight or angled handles, and other variations in brushes have been presented to the public. However, most users resist using more than one brush for a single cleansing.

Accordingly, it is desirable to provide an improved device to clean oral and body piercings, dental implants, dental implant supported dentures, a wide variety of prosthetics and body ornaments, and surrounding tissues, in order to maintain personal hygiene and prevent infections.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a perspective view of one illustrative embodiment of the personal hygiene device.

FIG. **2**A is a perspective view of the furcated end of an illustrative embodiment of the personal hygiene device shown in FIG. **1** approaching a user's tongue.

FIG. **2**B is a perspective view of the opposite non-furcated end of the illustrative embodiment of the personal hygiene device shown in FIG. **1** showing brush bristles approaching a user's lips.

FIG. **3** is a perspective view of another illustrative embodiment of the personal hygiene device.

FIG. **3**A is a perspective view of another illustrative embodiment of the personal hygiene device.

FIG. **3**B is a perspective view of another illustrative embodiment of the personal hygiene device.

FIG. **4**A is a perspective view of the furcated end of the illustrative embodiment of the personal hygiene device approaching a user's tongue shown in FIG. **3**.

FIG. **4**B is a perspective view of the opposite non-furcated end of the illustrative embodiment of the personal hygiene device showing brush bristles approaching a user's lips shown in FIG. **3**.

FIG. **4**C is a perspective view of one illustrative embodiment of the personal hygiene device showing brush bristles approaching a user's dental implants and dental implant supported dentures shown in FIG. **3**.

DETAILED DESCRIPTION

Disclosed is a personal hygiene device. The device includes an elongated handle having opposite ends. Brushing or cleaning heads or regions are located at one or more of the opposite ends of the elongated handle of the device. At least one end of the handle is furcated to provide more than one cleaning head or region that carries a plurality of brush bristles.

The furcated regions of the personal hygiene device are designed to overcome the limitations of a traditional toothbrush or oral hygiene brush for the cleaning of oral and body piercings, dental implants, dental implant supported dentures, and a wide variety of prosthetics and body ornaments. Each end of the device is specifically designed for clinical effectiveness, simplicity, and for a wide variety of designs of piercings, implants, prosthetics and ornaments.

The personal hygiene device allows for unobstructed movability of the brush cleaning heads down onto the epithelial or gum tissue lining oral and body piercings, dental implants, dental implant supported dentures, and a wide variety of prosthetics and body ornament, which results in reduced debris collection areas and thereby avoids bacterial growth and odor.

According to certain illustrative embodiments, one end of the handle is bifurcated and is comprised of two spaced-apart brush heads. The bifurcated brush heads may be disposed in angular, generally opposing relationship to each other. According to other embodiments, the furcated end of the handle may comprise more than two brush heads. For example, and without limitation, one end of the elongated handle may be trifurcated **64**, as shown in FIG. **3**A.

According to other embodiments, the brush heads of the hygiene device are flexible and the brush neck and elongated handle are rigid. According to alternative embodiments, the brush heads and brush necks of the hygiene device are flexible and the handle is rigid. According to other embodiments, the hygiene device comprises brush heads, brush necks, and handle that are flexible. According to other embodiments, the hygiene device may be provided with brush heads, brush necks, and handle that are rigid. According to other embodiments, the device may be provided with a handle that is

flexible, and wherein the brush heads and brush necks are rigid. According to other embodiments, one end of the elongated handle is flexible, whereas the opposite end of the elongated handle is rigid.

According to other embodiments, the handle end comprising the furcated brush heads are flexible, whereas the opposite handle end comprising a single brush head is rigid. According to other embodiments, the handle end comprising the furcated brush heads are rigid, whereas the opposite handle end comprising a single brush head is flexible. According to other embodiments, the furcated end of the handle is comprised of flexible and rigid brush heads. According to other embodiments, the furcated end of the handle is comprised of flexible and rigid brush necks.

The hygiene device may be manufactured from a wide variety of polymer materials. The polymeric materials may comprise homopolymers, co-polymers or terpolymers. Without limitation, and by way of illustration, the device may be manufactured from nylons, polyalkylenes, such as polypropylene, rubber and ethylene-propylene-diene terpolymer (EPDM). A suitable EPDM terpolymer that may be used to manufacture is commercially available from Exxon Mobil Chemical under the tradename SANTOPRENE.

The brush heads, brush necks and elongated handle may be provided as a single integral molded piece. According to other embodiments, the brush heads, brush necks and elongated handle may be provided as separate pieces that are connected to one another by a suitable connection means.

According to other embodiments, the brush heads and brush necks are provided as a single integral piece that can be attached to the handle is provided as separate piece for replaceability purposes.

According to other embodiments, the brush necks and handle are provided as a single integral piece that can be attached to the brush heads provided as separate pieces for replaceability purposes.

According to other embodiments, the elongated handle of the device is positioned at an angle relative to the cleaning heads or regions of the device.

The cleaning regions may be shaped in a spiralling, twisting or cork-screw manner from which individual brush bristles radiate outwards.

The elongated handle of the device is comprised of a cylindrical handle. The cylindrical handle may include a circumferential thumb rest to improve gripping and manual dexterity when in use. Alternatively, the elongated handle may be provided with indentations to improve gripping and manual dexterity when in use. According to other embodiments, the device includes a cylindrical handle, the center portion of which is comprised of a softer or less rigid material than the other handle portions that extend away from the central handle portion to improve gripping and manual dexterity when in use.

According to certain embodiments, and as shown in FIG. **3**B, the device may include an electric motor **60** to rotate and/or vibrate the brush bristles. The electric motor **60** may be powered by batteries or any other source of suitable electric current. The motor **60** may rotate the bristles about their respective rotary axes at variable rotational speeds. The brush may also include a timed stopping mechanism to shut off the motor **60** after a pre-determined period of time.

The bristles of the device may, have variable lengths and textures for different applications. According to certain embodiments, the bristles, radiating from the brushing heads or regions may radiate in a pattern wherein at least some of the bristles overlap one another.

According to other embodiments, and as shown in FIG. **3**B, the device is comprised of a light source **62** positioned at the base or tip of the brush heads allowing for increased visibility, including a timer to switch off the light at specific intervals.

The personal hygiene brush is capable of cleaning oral and body piercings, dental implants, dental implant supported dentures, and a wide variety of prosthetics and body ornaments.

The personal hygiene brush is capable of maneuvering in and around oral and body piercings, dental implants, dental implant supported dentures, and a wide variety of prosthetics and body ornaments without having to remove them from the body.

The personal hygiene brush will now be further described in connection with certain illustrative embodiments depicted in the drawing Figures. It should be noted that the personal hygiene brush should not be limited to the illustrative embodiments depicted by the Figures.

Referring now to the drawings, an exemplary embodiment personal hygiene brush is shown in FIG. **1**. Referring to FIG. **1**, device **10** includes an elongated handle **12** and opposite ends **13** and **14**. End **13** is bifurcated into two spaced-apart cleaning heads **20** and **22**. A further cleaning region **17** is located at the opposite end **14** of handle **12**. Cleaning region **17** includes cleaning head **36**. Heads **20**, **22** and **36**, in which heads **20** and **22** may be disposed in angled, generally opposed relationship to each other. Head **20** is connected to handle **12** with neck region **24** extending between head **20** and handle **17**. Likewise, head **22** is connected to handle **12** with neck region **26** extending between head **22** and handle **17**.

Each head **20**, **22** and **36** of device **10** has a respective set **30**, **32** and **34** of bristles disposed thereon and emanating therefrom. Bristles **30** extend or radiate outwardly from head **20**, bristles **32** similarly extend or radiate outwardly from head **22**, and bristles **34** similarly extend or radiate outwardly from head **36**. The ends of the bristles of bristle sets **30**, **32** and **34** are embedded or implanted in heads **20**, **22** and **36** as is generally known in the art. The opposite ends of the bristles are free and are used for contacting piercings, implants, dentures, or tissue to be cleaned. The bristles of each set **30** and **32** are of substantially the same length in which the outermost ends of bristle set **30** are coextensive with the outermost ends of bristles **32**. The bristles of bristle sets **30** and **32** are shown in an overlapping pattern.

Turning now to FIG. **3**, another illustrative embodiment of the hygiene brush **10** is shown. The device **10** includes an elongated handle **12** and opposite ends **13** and **14**. End **14** is bifurcated into two spaced-apart cleaning heads **20** and **22**. Cleaning heads **20** and **22** carry bristle sets **30** and **32** respectively. Located at opposite end **14** is cleaning head **36**, which carries bristle set **34**. Furthermore, heads **20**, **22** and **36** may be shaped in a spiralling, twisting or cork-screw manner (sec generally FIGS. **3**-**4**C) from which bristles radiate outwards, allowing for increased surface area for the brush bristles, thereby improving the effectiveness of the device **10** when cleaning and massaging the aforementioned articles and body parts.

As shown in FIGS. **2**A and **4**A, the furcated end **13** may be employed to clean the epithelium and tissues (e.g., tongue **42** or palate) lining oral and body piercings **44**, dental implants **48**, dental implant supported structures **49**, and a wide variety of prosthetics and body ornaments. The presently described embodiment of a two-headed (bi-furcated), angled and opposing arrangement of heads **20** and **22** of device **10** provides for an extended reach down onto the epithelium and tissues lining oral and body piercings **44**, dental implants **48**, dental implant supported structures **49**, and a wide variety of

prosthetics and body ornaments of a typical user. Thus, heads **20** and **22** will easily reach as for down onto the epithelium and tissues lining oral and body piercings **44**, dental implants **48**, dental implant supported structures **49**, and a wide variety of prosthetics and body ornaments needed to thoroughly clean and massage the aforementioned areas and articles. The necks **24** and **26** provide for a continuous amount of pressure of bristles **30** and **32** on the epithelium and tissues lining oral and body piercings **44**, dental implants **48**, dental implant supported structures **49**, and a wide variety of prosthetics and body ornaments regardless the thickness of the previously mentioned areas and articles being cleaned or massaged.

Device **10** may then also be nipped end for end so that cleaning region **17** can be used. As shown in FIGS. **2**B, **4**B and **4**C, the non-furcated end **14** may be employed to clean the user's lips **46**, labium or other epithelium and tissues lining oral and body piercings **44**, dental implants **48**, dental implant supported structures **49**, and a wide variety of prosthetics and body ornaments. Head **36** is also useful for brushing the tongue and palate. Plaque on the tongue and palate is at least loosened and may be removed by back and forth strokes of bristles **34**.

Alternative shapes for many of the above described elements may also be used. Less conventional circular or oblique heads may be utilized for heads **20**, **22** and **36** of device **10**. A third brush could easily be included for cleaning the top surfaces of the teeth simultaneously with the use of the hygiene brush to clean and/or massage the epithelium and tissues lining oral and body piercings **44**, dental implants **48**, dental implant supported structures **49**, and a wide variety of prosthetics and body ornaments. Such a third brush may be integrally formed with handle **12**, like heads **20**, **22** and **36**. Likewise, any other practical number of brushes could be affixed onto handle **12**. Additionally, indentations **25** may be provided in the handle **12** to improve gripping and manual dexterity when in use.

While the personal hygiene brush has been described in connection with various illustrative embodiments, as shown in the Figures, it is to be understood that other similar embodiments may be used or modifications and additions may be made to the described embodiments for performing the same functions. Therefore, the personal hygiene brush should not be limited to any single embodiment, but rather construed in breadth and scope in accordance with the recitation of the appended claims.

I claim:

1. A personal hygiene device comprising:

an elongated handle having a furcated end, said furcated end defining cleaning heads, each of said cleaning heads having bristles radiating outwardly about the outer surface of said cleaning heads; and

an opposite end of said handle defining a further cleaning head having bristles radiating outwardly about the outer surface of said further cleaning head.

2. The personal hygiene device of claim **1**, wherein said furcated end comprises a plurality of said cleaning heads.

3. The personal hygiene device of claim **2**, wherein said furcated end comprises bifurcated cleaning heads.

4. The personal hygiene device of claim **2**, wherein said furcated end comprises trifurcated cleaning heads.

5. The personal hygiene device of claim **1**, wherein said handle and said plurality of cleaning heads are integrally molded.

6. The personal hygiene device of claim **1**, wherein said handle and said plurality of cleaning heads are separately molded.

7. The personal hygiene device of claim **1**, wherein said cleaning heads comprise a spiraling shape.

8. The personal hygiene device of claim **1**, wherein at least of portion said bristles overlap one another.

9. The personal hygiene device of claim **1**, wherein said bristles comprise variable lengths and textures.

10. The personal hygiene device of claim **1**, wherein said cleaning heads are flexible and said handle is rigid.

11. The personal hygiene device of claim **1**, wherein said cleaning heads are rigid and said handle is flexible.

12. The personal hygiene device of claim **1**, wherein said cleaning heads and said handle are rigid.

13. The personal hygiene device of claim **1**, wherein said cleaning heads and said handle are flexible.

14. The personal hygiene device of claim **1**, wherein said cleaning heads are angled from said handle.

15. The personal hygiene device of claim **1**, wherein said handle and said cleaning heads comprise a synthetic polymer material.

16. The personal hygiene device of claim **1**, wherein a middle portion of said handle comprises a softer or less rigid material than the other portions of said handle.

17. The personal hygiene device of claim **1**, wherein a middle portion of said handle comprises a depression formed of a different material than said handle.

18. The personal hygiene device of claim **1**, wherein the outer surface of said handle comprises indentations emanating outwardly therefrom.

19. The personal hygiene device of claim **1**, further comprising an electric motor disposed within said handle; and

transmission means extending from said motor in said handle to said cleaning heads for moving said bristles about their respective axes.

20. The personal hygiene device of claim **1**, further comprising a light source disposed within said device.

* * * * *